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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,792	08/29/2001	Paul A. Farrar	M4065.0382/P382-A	5268

24998 7590 09/23/2002

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EXAMINER

LEE, EUGENE

ART UNIT PAPER NUMBER

2815

DATE MAILED: 09/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,792

Applicant(s)

FARRAR ET AL.

Examiner

Eugene Lee

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-- The MAILING DATE of this communication appears in the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 46-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a conductive path extending from said buried conductor pattern wherein said buried conductor pattern has a spherical pattern must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 46 thru 50, 52, 54 and 56 thru 61 are rejected under 35 U.S.C. 102(b) as being anticipated by Rostoker '768. Rostoker discloses (see, for example, FIG. 3) a semiconductor device comprising a monocrystalline substrate 4, and a plug of polysilicon (buried conductor pattern) 32. Also, see FIG. 4.

4. Claims 46 thru 50, 52, and 54 thru 61 are rejected under 35 U.S.C. 102(b) as being anticipated by Lu et al. '581. Lu discloses (see, for example, FIG. 8) a semiconductor device

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comprising a single crystal silicon substrate 10, and a polysilicon layer (buried conductor pattern) 28. An empty cavity 6 resides above the substrate.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 46 thru 48, 50 thru 52, 56 thru 59, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. '789 in view of Yamagata et al. '475. Yamazaki discloses (see, for example, FIG. 4(C)) a semiconductor device comprising a silicon substrate 1, and metallic conductive layer (buried conductor pattern) 5. In column 4, lines 46-51, Yamazaki discloses the metallic conductive layer as being tungsten. Yamazaki does not disclose the substrate as being monocrystalline. However, Yamagata discloses (see, for example, column 1, lines 52-54) that monocrystalline substrates have good controllability of crystal orientations and very less crystal defects. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use monocrystalline substrate in Yamazaki's invention in order to have good controllability of crystal orientations and very less crystal defects.

7. Claims 46, 47, and 50 thru 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witek et al. '438 in view of Yamagata et al. '475. Witek discloses (see, for example, FIG. 11) a semiconductor device comprising a substrate 12 and conductive layer (buried conductive pattern) 20. In column 3, lines 63-69, Witek discloses the substrate as being germanium. Witek

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does not disclose the substrate as being monocrystalline. However, Yamagata discloses (see, for example, column 1, lines 52-54) that monocrystalline substrates have good controllability of crystal orientations and very less crystal defects. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use monocrystalline substrate in Witek's invention in order to have good controllability of crystal orientations and very less crystal defects.

8. Claims 62 thru 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rostoker '768 as applied to claims 46 thru 50, 52, 54 and 56 thru 61 above, and further in view of Tsu et al. '420 B1. Rostoker does not disclose a processor system and a circuit coupled to said processor comprising a conductive structure. However, Tsu discloses (see, for example, FIG. 4C and FIG. 6) a memory array comprising a processor coupled to additional circuitry. In column 8, lines 61-*, Tsu states that the memory array may be embedded into a larger integrated circuit device wherein the memory array is included with control circuitry on the same integrated circuit. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the semiconductor device of Rostoker into a memory array like Tsu in order to utilize Rostoker's device in memory circuits.

INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 703-305-5695. The examiner can normally be reached on M-F 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Eugene Lee
September 17, 2002



EDDIE LEE
SUPERVISORY PATENT EXAMINER
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